PATENT SPECIFICATION

1,086,311

DRAWINGS ATTACHED

1,086,311

Inventor: GEORGE JAMES SELL.

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COMPLETE SPECIFICATION

Improvements relating to Wall Constructions

ERRATA

SPECIFICATION NO. 1,086,311

Page 1, line 77, *for* "cladidng" *read* "cladding"

Page 2, line 47, *for* "on to" *read* "onto"

Page 2, line 70, *after* "said" (first occurrence) *insert* "first end webs, and securing a second set of said plaster board sheets with said lined faces in engagement with said"

THE PATENT OFFICE,
29th November 1967

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vides a wall construction comprising a plurality of upright members set in a common base, each of said members having a cross-section presenting first and second spaced and oppositely facing end webs, and each of said first and second end webs having a recess therein for receiving and retaining fastening means, cladding, comprising prelaminated plasterboard sheets, each lined on one face thereof with metal foil, fastening means engaging with said recesses in said first and second end webs, said fastening means securing a first set of said plasterboard sheets with said lined faces in engagement with said first end webs, and securing a second set of said plasterboard sheets with said lined faces in engagement with said second end webs, said first and second sets of plasterboard sheets defining a mould cavity between the lined faces thereof, and a core of concrete set in said cavity, said upright members being embedded in said core.

The invention will be more clearly understood from the following description of an illustrative embodiment thereof, and the accompanying drawing, which is an isometric could take forms for example, a lattice structure, othen than as shown. The outer edges of the flanges 3 are inturned at 5.

The base 8 on which the stanchions 1 are erected suitably comprises a pre-moulded concrete foundation beam, as shown in Figure 2, which underlies the wall. The beam 8 rests on foundation pad 21 or other suitable foundation, for example, short bored piles. The stanchions 1 are secured to the beam 8 by angle brackets 22 which are bolted into holes in the beam preformed at suitable spacings.

When the stanchions 1 are in place, sheets of cladding material 25 are applied and secured to them.

The cladidng material 25 comprises prelaminated plasterboard which is fixed to the end webs by means of self-tapping screws (not shown) which engage in the screw gaps 6. Non-fines concrete 24 is then poured in and hand compacted to ensure that the cavity is completely filled. This effectively completes the construction steps, the concrete now being merely allowed to set hard and the external surfaces of the cladding

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Inventor: GEORGE JAMES SELL.

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COMPLETE SPECIFICATION

Improvements relating to Wall Constructions

We, TRUSTEEL CORPORATION (UNIVERSAL) LIMITED, of Gate House, The High, Harlow, Essex, a British Company, do hereby declare the invention, for which we pray that a patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement:—

The present invention relates to wall constructions formed from concrete.

An object of the present invention is to provide a wall, for example, a party wall, which can be load bearing, and which has good sound and heat-insulating properties. It is also an object to provide a wall which has cladding material on both surfaces.

The present invention accordingly provides a wall construction comprising a plurality of upright members set in a common base, each of said members having a cross-section presenting first and second spaced and oppositely facing end webs, and each of said first and second end webs having a recess therein for receiving and retaining fastening means, cladding, comprising prelaminated plasterboard sheets, each lined on one face thereof with metal foil, fastening means engaging with said recesses in said first and second end webs, said fastening means securing a first set of said plasterboard sheets with said lined faces in engagement with said first end webs, and securing a second set of said plasterboard sheets with said lined faces in engagement with said second end webs, said first and second sets of plasterboard sheets defining a mould cavity between the lined faces thereof, and a core of concrete set in said cavity, said upright members being embedded in said core.

The invention will be more clearly understood from the following description of an illustrative embodiment thereof, and the accompanying drawing, which is an isometric view of a party wall according to the invention. The framework for the wall comprises a series of stanchions or uprights 1, suitably of steel, which are mounted on a suitable base or foundation 8 and which reach to a ceiling level at which they support a beam (not shown). This beam may in turn support uprights similar to the uprights 1 for the second storey.

Each of the uprights 1 is an I-section girder. The end webs forming the lateral edges of the girder each comprise a pair of aligned flanges 3 which are spaced apart to provide a gap or channel 6 for a purpose described below. The part of the centre web 4 inwardly of the portions providing the channels 6, is an openwork structure, which could take forms for example, a lattice structure, othen than as shown. The outer edges of the flanges 3 are inturned at 5.

The base 8 on which the stanchions 1 are erected suitably comprises a pre-moulded concrete foundation beam, as shown in Figure 2, which underlies the wall. The beam 8 rests on foundation pad 21 or other suitable foundation, for example, short bored piles. The stanchions 1 are secured to the beam 8 by angle brackets 22 which are bolted into holes in the beam preformed at suitable spacings.

When the stanchions 1 are in place, sheets of cladding material 25 are applied and secured to them.

The cladidng material 25 comprises prelaminated plasterboard which is fixed to the end webs by means of self-tapping screws (not shown) which engage in the screw gaps 6. Non-fines concrete 24 is then poured in and hand compacted to ensure that the cavity is completely filled. This effectively completes the construction steps, the concrete now being merely allowed to set hard and the external surfaces of the cladding

being eventually decorated as desired. Further storey heights can be cast subsequently in a similar way. It will be appreciated that the cladding material 25 must be made impervious to the moisture in the no-fines concrete as this will otherwise creep through the material and spoil the external face. Thus the pre-laminated plasterboard mentioned above is provided on its inner surface 26 with a layer of metal foil, which additionally functions to provide a degree of thermal insulation.

The channels 6 may be sealed, for example, by being plugged with "NEOPRENE" or other suitable sealing material, or by being covered by a siutable self-adhesive tape. Such sealing means can be applied to the stanchions during the manufacturing stage. If tape is used, it need never be removed, as screws or like securing means can readily penetrate it.

When the wall extends to an outer face of the building, the end of the mould cavity at this face can be closed by applying a permanent external cladding member, in the form of an upright connected to panels 23 or by means of such panels.

After the concrete wall has been built up to the first floor, the moulding operation is repeated on the next floor and may be further repeated on any further floors.

The openwork structure of the stanchions permits continuity of the concrete for the length and height of the wall.

Among the advantages afforded by the invention, is that no temporary scaffolding has to be erected for forming the wall. The stanchions, which constitute the framework of the building itself, take the place of temporary scaffolding besides providing, when once embedded into the core, reinforcement for the concrete.

The invention is particularly but not exclusively applicable to the construction of party walls, for example, between semi-detached or terraced houses having a steel or other frame structure on to which cladding material is required to be applied. The invention provides in such an application a party wall with good heat and sound insulation properties and which is also resistant to fire. The invention also provides a party wall which is load bearing, so that it can support flooring and roofing elements.

WHAT WE CLAIM IS:—

1. A wall construction comprising a plurality of upright members set in a common base, each of said members having a cross-section presenting first and second spaced and oppositely facing end webs, and each of said first and second end webs having a recess therein for receiving and retaining fastening means, cladding, comprising prelaminated plasterboard sheets, each lined on one face thereof with metal foil, fastening means engaging with said recesses in said first and second end webs, said fastening means securing a first set of said plasterboard sheets with said lined faces in engagement with said second end webs, said first and second sets of plasterboard sheets defining a mould cavity between the lined faces thereof, and a core of concrete set in said cavity, said upright members being embedded in said core.

2. A wall construction as claimed in Claim 1, wherein the concrete is no-fines concrete.

3. A wall construction substantially as hereinbefore described with reference to the accompanying drawing.

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1 SHEET

COMPLETE SPECIFICATION

This drawing is a reproduction of the Original on a reduced scale.